

126. A New Type of *Lepidocyclina* with a Multilocular Nucleoconch from the Taitō Mountains, Taiwan (Formosa).

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Introduction.

The following article includes a description of a new type of *Lepidocyclina* found in a limestone from the Taitō Mountains of Taiwan. The specimens of the limestone were collected by myself during a geological reconnaissance in July 1929 from a place ca. 500 m. southwest of an aborigines' village named Kowaritsu in Taitō District. This fossil locality is about five kilometers south of Taikankō, in Kwarenkō District, from where Prof. H. Yabe and I¹⁾ once reported a *Lepidocyclina*-limestone containing *Lepidocyclina sumatrensis* forma *mirabilis* Yabe and Hanzawa, *Cycloclypeus communis* Martin, etc. Huge blocks of this *Lepidocyclina*-limestone are not rare on the flood plain of the river Shūkorankei near Taikankō, but the limestone is yet found nowhere exposed in the valley, all the blocks being those removed by erosion from their original sites. But there are a number of limestone lenses obviously of the same horizon cropping out in some other valleys of the Taitō Mountains, which are mostly built of Tertiary rocks striking parallel to the general trend of the mountain range. The limestone exposed near Kowaritsu now in question which is one of these lenses is compact in texture and white in colour with a light pinkish tinge; it is richly fossiliferous, but the fossils are not separable from the matrix, and thin slices of the rock are used for the examination of the organic remains.

The limestone is rich in foraminifera and is specially interesting on account of its content of a new type of *Lepidocyclina* described below. Excluding this particular form, the foraminifera discriminated in the limestone are:

<i>Lepidocyclina</i> sp.	rare
<i>Lepidocyclina sumatrensis</i> forma <i>mirabilis</i> Yabe and Hanzawa	rare

1) H. Yabe and S. Hanzawa: Tertiary Foraminiferous Rocks of Taiwan (Formosa), Proc. 4 (1928), 535 and Sci. Rep. Tōhoku Imp. Univ. 2nd Ser. (Geol.) 14, 1 (1930), 42.

<i>Amphistegina radiata</i> (F. & M.)	common
<i>Cycloclypeus communis</i> Martin	common
<i>Planorbulinella larvata</i> (P. & J.)	rare
<i>Acervulina inhaerens</i> Schultze var. <i>plana</i> Carter	common
<i>Carpenteria</i> sp.	rare
<i>Sporadotrema cylindrium</i> Carter	rare
<i>Polytrema corallina</i> Risso	rare
<i>Orbulina universa</i> d'Orb.	rare
<i>Globigerina bulloides</i> d'Orb.	not rare

The first form of *Lepidocyclina* is rather large in size and has minute median chambers. It is distinguishable from the second form of the same genus as well as the new form stated above, but the available materials are not sufficient for its specific determination.

The present note is a part of the work on the Tertiary foraminiferous rocks of Taiwan by Prof. H. Yabe and myself, for which the Imperial Academy tendered a grant in the fiscal years 1929 and 1930, and it is my pleasant duty to express our cordial thanks to the authorities of the Academy in publishing this short note. Thanks are also due to Prof. H. Yabe who kindly looked over the manuscript.

DESCRIPTION.

Genus *Lepidocyclina* Gümbel, 1868.

Subgenus *Multilepidina* nov.

The diagnostic feature of *Multilepidina* is furnished by its nucleoconch which is discoidal, rather irregular in outline and multilocular. Chambers within the nucleoconch are about 8 in number, subequal in size and lie on one plane; they have thick outer walls which are finely tubulated, and separated from one another by thinner compact partitions; they are subcircular in median section and elliptical-subquadrangular in transverse section. The outer wall and partitions of nucleoconch are traversed by stoloniferous passages of communication.

The nucleoconch of *Multilepidina* more or less resembles that of *Pliolepidina*¹⁾ in being multilocular, but in the latter it consists of a large central chamber and several much smaller ones attached upon it, all of which are provided with very thin walls.

Multilepidina is also close to *Polylepidina*²⁾ with regard to the

1) H. Douvillé: Les Orbitoïdes: développement et phase embryonnaire; leur évolution pendant le Cretacé, (C. R. séance l'Aacd. Sci. **161** (1915), 727).

2) T. W. Vaughan: American and European Tertiary Larger Foraminifera, (Bull. Geol. Soc. Am. **35** (1924), 807).

nucleoconch, which, however, generally consists in the latter of 4 chambers arranged in a cross with two larger chambers on the longer axis and the two smaller on the shorter. Moreover, the median chambers of *Polylepidina* in median section are subrhomboidal with distal walls arcuated and proximal truncated, while those of *Multilepidina* are generally spatuliform. In this way *Multilepidina* may easily be distinguished from *Polylepidina* as well as from *Pliolepidina*.

Lepidocyclina (Multilepidina) irregularis sp. nov.

Test comparatively large, attaining 10 mm. or more in diameter, composed of a small lenticular central boss, 2.5 mm. broad and ca. 1 mm. thick, and a broad and thin peripheral flange with several radiating ridges as in *Aktinocyclina*. Peripheral flange ca. 0.2 mm. thick between the radial ridges and 0.4 mm. thick on them. The central part of test minutely papillated on the surface, papillae being the heads of the pillars which pass through the lateral chambers.

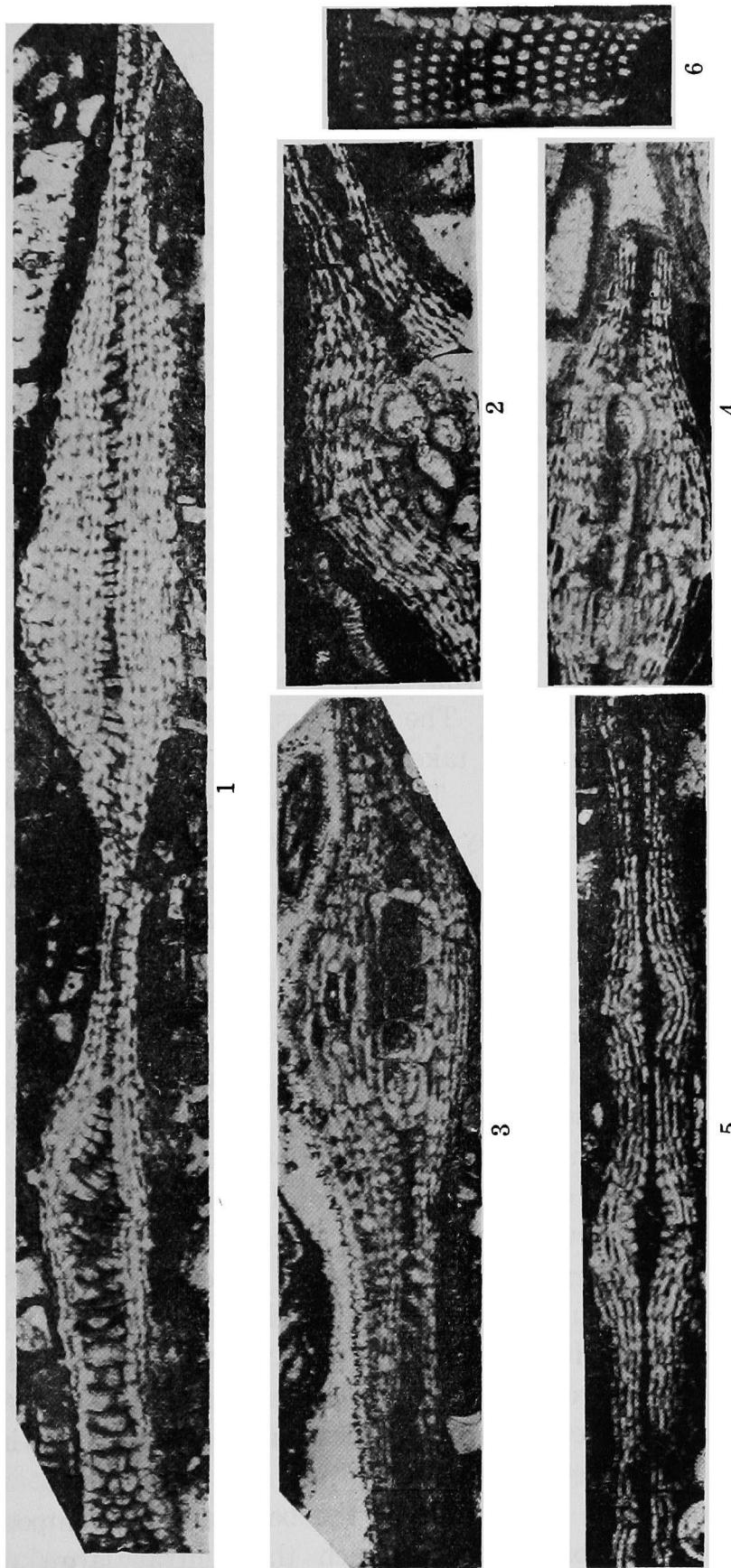
Nucleoconch large, attaining 2 mm. in breadth and 0.32 mm. in thickness, discoidal, and more or less irregular in outline, multilocular, comprising about 8 chambers which are subequal in size, 0.4–0.5 mm. in diameter and disposed in a single plane. Outer wall of nucleoconch ca. 0.04–0.07 mm. thick, partitions between the chambers ca. 0.01 mm. thick. Stoloniferous passages of communication through the wall of the nucleoconch and the partitions ca. 0.02 mm. in diameter.

Median chambers generally spatulate in median section, measuring radially 0.1 mm. and tangentially 0.074 mm.; 0.053 mm. high at the center of test in vertical section, thence gradually increasing in height to the periphery where they are 0.32 mm. high; much higher in the radial ridges measuring 0.16–0.21 mm.

Lateral chambers rather narrow in vertical section, being 0.042–0.074 mm. broad and 0.021 mm. high in general, but sometimes as broad as 0.26 mm. in the central boss. Chambers in a tier over the nucleoconch numbering 6–8, in the radial ridges about 4 and elsewhere 1 or 2. Roofs and floors of median and lateral chambers thin, usually 0.026 mm. and occasionally up to 0.074 mm. thick.

Pillars narrow, being 0.074 mm. thick and having their heads projected as papillae on the external surface of test.

Locality and geological horizon.—ca. 500 m. southwest of Kowaritsu in Taitō District, Taiwan. Kaizan Beds, Burdigalian.



Lepidocyclina (Multilepidina) irregularis sp. nov.

Fig. 1. An excentric transverse section cut across two radial ridges. Fig. 2. An oblique section passing through the nucleoconch. Fig. 3, 5. Transverse sections passing through the nucleoconch. Fig. 4. A median section cut across a radial ridge. Fig. 6. A transverse section cut oblique to two radial ridges. (All the figures are enlarged twenty times natural size).